ZENTRALE VERTRAGSKUNDENDIENSTE + ERSATZTEILE-LAGER
Rudolf Hemmersbach
Rohrmannstraße 12 · 8500 Nürnberg 80 · Tel. (0911) 26 84 81 · Telex 06 23 856 FSHEM

H 16

Service

WatsoN

elite

tristar

CO 6760

AM/FM STEREO WITH
CASSETTE RECORD/PHONO
PLAYER

TECHNISCHE DATEN

AM/FM TUNER SECTION

ANTENNA SYSTEM	AM:	FERRITE BAR ANTENNA
	FM:	75 OHM UNBALANCED (EXT.)
TUNING RANGE	AM:	540 - 1610 kHz
	FM:	87.6 - 108 MHz
INTERMEDIATE FREQUENCY		
	AM:	460 kHz
	FM:	10.7 MHz

AUDIO SECTION

SPEAKER IMPEDANCE	4 OHM
OUTPUT POWER	7.5 WATTS (10% THD.)
FREQUENCY RESPONSE	100 Hz - 10 kHz
SIGNAL TO NOISE RATIO	40 dB
TONE CONTROL (CUT) 10 kHz	-14 dB
POWER SUPPLY	220V, 50Hz
POWER CONSUMPTION	40 WATTS

STEREO CASSETTE TAPE RECORDER

TAPE SPEED	1 7/8 IPS (4.7cm P.S.)
FREQUENCY RESPONSE	125 Hz - 8 kHz
WOW & FLUTTER	0.35%

TURNTABLE SECTION

MOTOR	DC MOTOR
SPEED	33 1/3, 45 RPM

DIMENSIONS	W 16-1/2" x H 13-1/2" x D 13-1/4"
WEIGHT	10.2 kgs (22.44 lbs)

AM/FM Alignment

EQUIPMENT REQUIRED

1. RF SIGNAL GENERATOR
2. AC V.T.V.M.

GENERAL

1. SIGNAL INPUT MUST BE AS LOW AS POSSIBLE TO AVOID OVERLOAD AND CLIPPING. (USE HIGHEST SENSITIVITY OF OUTPUT INDICATOR).
2. VOLUME CONTROL AT MAXIMUM, BALANCE AND TONE CONTROLS AT MECHANICAL CENTER.
3. STANDARD MODULATION IS 1,000 Hz AT 30% AMPLITUDE MODULATION.
4. CONNECT 8 OHMS LOAD ACROSS SPEAKER JACK.

STEP	SIGNAL SOURCE	OUTPUT INDICATOR	SIGNAL GENERATOR	DIAL SETTING	ADJUSTMENT	ADJUST FOR -
AM IF ALIGNMENT	SET FUNCTION SWITCH TO AM					
1	LOOP OF SEVERAL TURNS. OF WIRE ACROSS GENERATOR LEADS. PLACE LOOP CLOSE TO THE AM ANTENNA	V.T.V.M. ACROSS SPEAKER JACK L OR R	460 kHz	TUNING GANG CLOSED	T104	MAXIMUM OUTPUT ON VTVM
2					T105	
3	REPEAT STEPS 1 AND 2 FOR OPTIMUM SENSITIVITY					
AM RF ALIGNMENT	SET FUNCTION SWITCH TO AM					
1	SAME AS ABOVE	SAME AS ABOVE	525 kHz	TUNING GANG CLOSED	T103	SAME AS ABOVE
2			1650 kHz	TUNING GANG OPEN	TC-4	
3	REPEAT STEPS 1 AND 2 FOR OPTIMUM SENSITIVITY					
4	SAME AS ABOVE	SAME AS ABOVE	600 kHz	TUNE FOR SIGNAL	L106	SAME AS ABOVE
5			1400 kHz		TC-3	
6	REPEAT STEPS 5 AND 6 FOR OPTIMUM SENSITIVITY					
FM IF ALIGNMENT	SET FUNCTION SWITCH TO FM					
1	PLACE GENERATOR LEADS ACROSS FM ANTENNA TERMINALS	SAME AS ABOVE	10.7 MHz	TUNING GANG CLOSED	T101	SAME AS ABOVE
2					T102	
3	REPEAT STEPS 1 AND 2 FOR OPTIMUM SENSITIVITY					
FM RF ALIGNMENT	SET FUNCTION SWITCH TO FM					
1	SAME AS ABOVE	V.T.V.M. ACROSS SPEAKER JACK L OR R	87.35 MHz	TUNING GANG CLOSED	L104	MAXIMUM OUTPUT ON V.T.V.M.
2			108.25 MHz	TUNING GANG OPEN	TC-2	
3	REPEAT STEPS 1 AND 2 FOR OPTIMUM SENSITIVITY					
4	SAME AS ABOVE	SAME AS ABOVE	90 MHz	TUNE FOR SIGNAL	L102,103	SAME AS ABOVE
5			106 MHz		TC-1	
6	REPEAT STEPS 4 AND 5 FOR OPTIMUM SENSITIVITY					

FM-Stereo Alignment

EQUIPMENT REQUIRED

FREQUENCY COUNTER

PRELIMINARIES

1. SET FUNCTION SWITCH TO FM
2. REMOVE LINE CORD ANTENNA FROM FM. EXT. ANTENNA TERMINAL

ITEM	SIGNAL SOURCE	SIGNAL GENERATOR FREQUENCY	OUTPUT INDICATOR	DIAL SETTING	ADJUSTMENT	ADJUST FOR-
ADJUSTMENT OF VCO FREQUENCY	GENERATOR LEADS TO FM EXT. ANTENNA	98 MHz (30uV)	FREQ. COUNTER ACROSS TO TP121 (MPX TEST) AND G.	NO SIGNAL	SFR101 10KB	19 kHz ± 50 Hz

Cassette Deck A & B Electrical Adjustments

INSTRUMENT REQUIRED ① VTVM ② TEST TAPE

Item	Signal Source Connection	Output Connection	Mode	Adjustment	Specification	Remarks
Head angle adjustment	Test tape 8 KHz	VTVM to output terminal See Fig. 13	Playback	Head angle adjustment Screw 1 See Fig. 13	Maximum	

Cassette Deck A & B Mechanical Adjustments

Instrument required:
Cassette torque test tape (Hartak X-87 or equivalent)

Item	Measurement Method	Mode	Spec	Adjustment Method	Remarks
Take-up tension adjustment	Cassette torque test tape as shown in Figure 14 .	Playback	40-70 gr-cm	Carefully bend spring either direction to achieve between 40-70 gr-cm take-up torque. See Figure 15 .	Clean the oil and dust adhering to flywheel belt and the rubber ring of the take-up reel table.

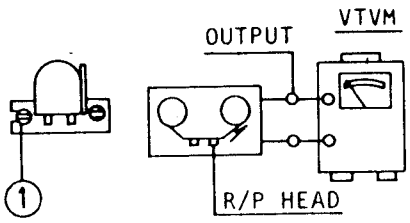


Figure 13

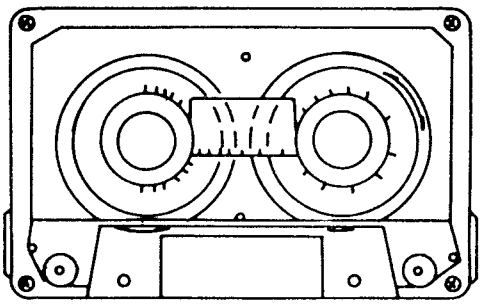


Figure 14

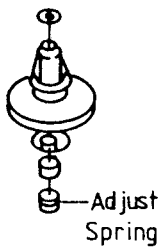
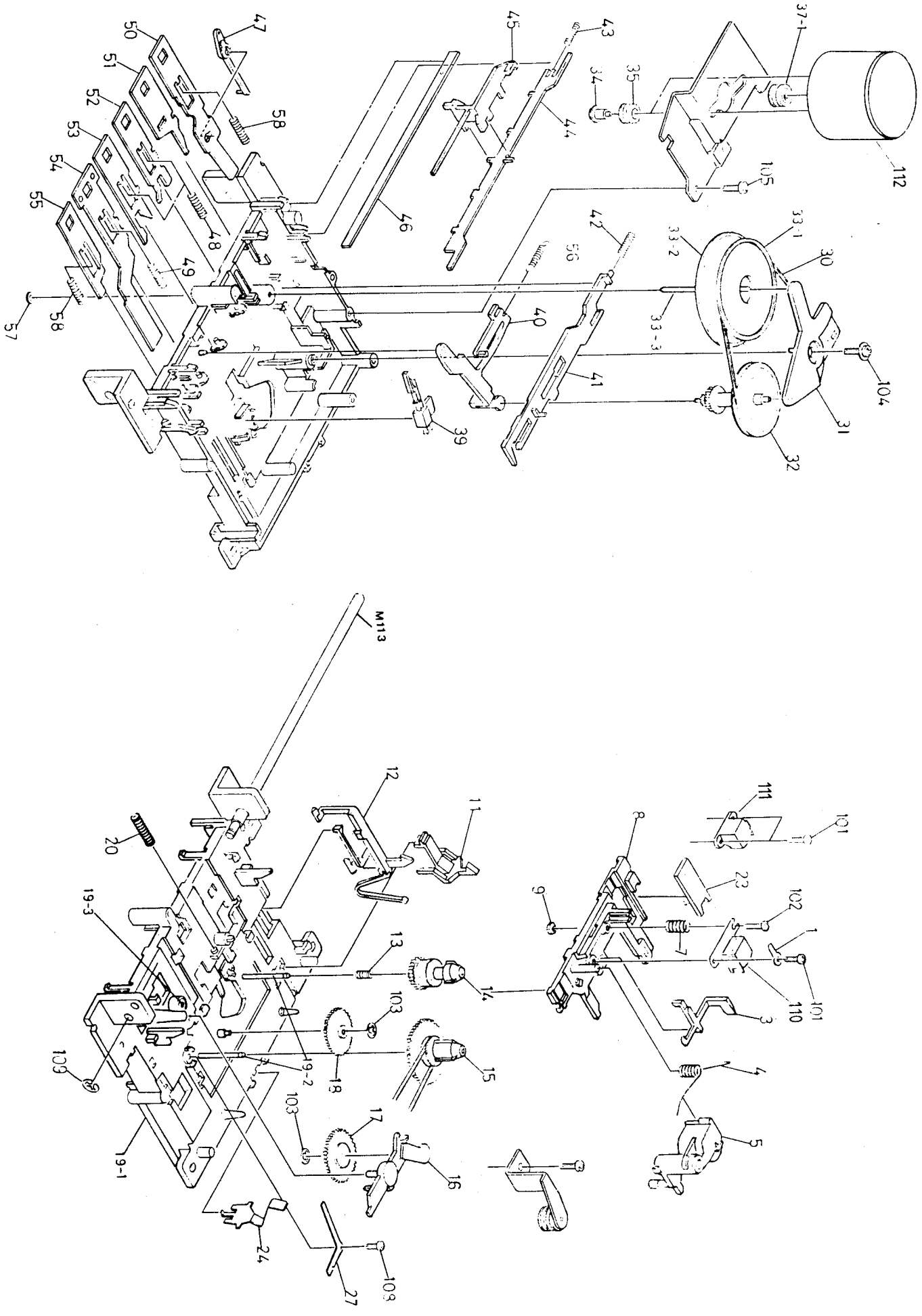


Figure 15

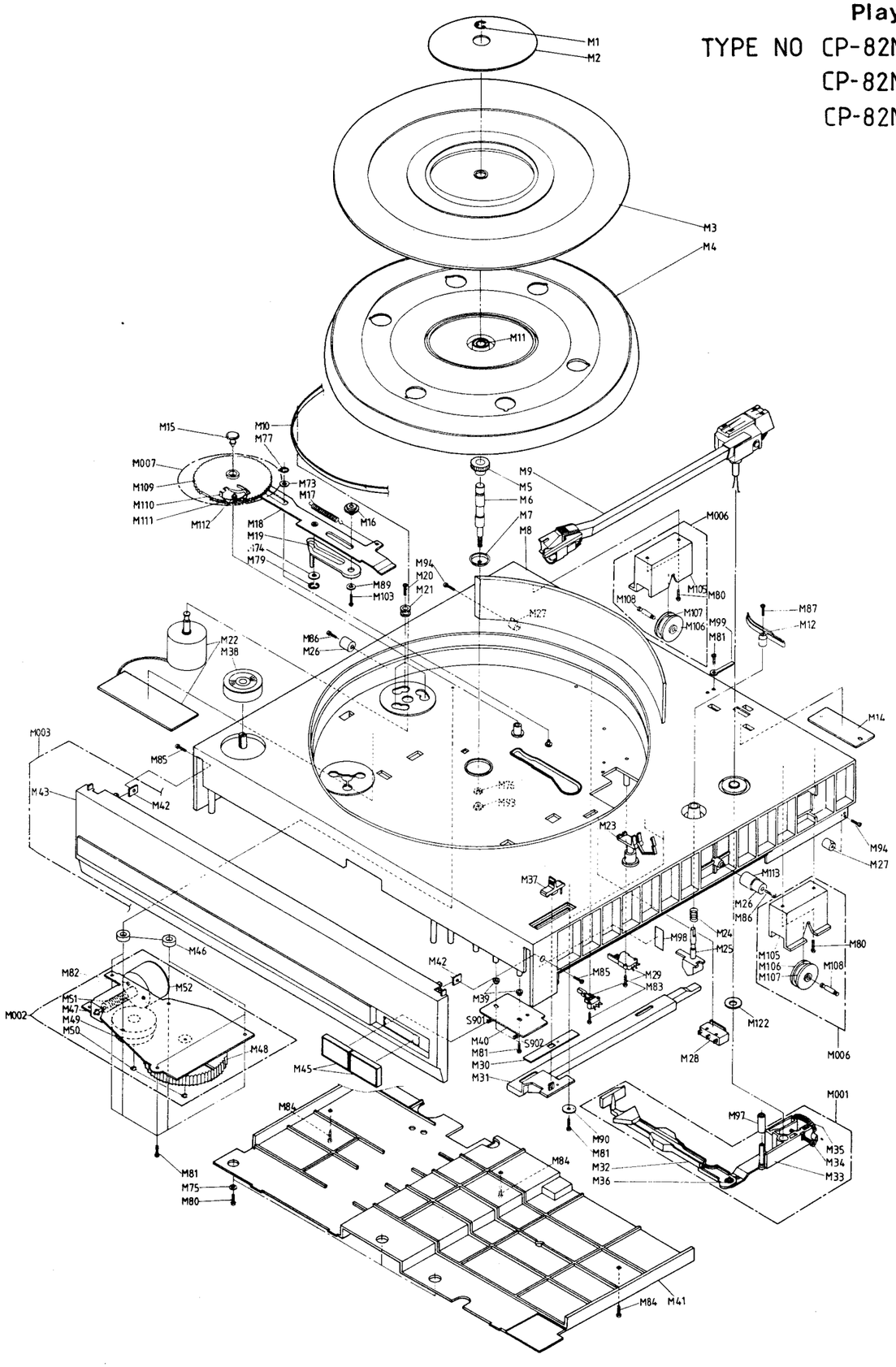
Cassette Deck Exploded View

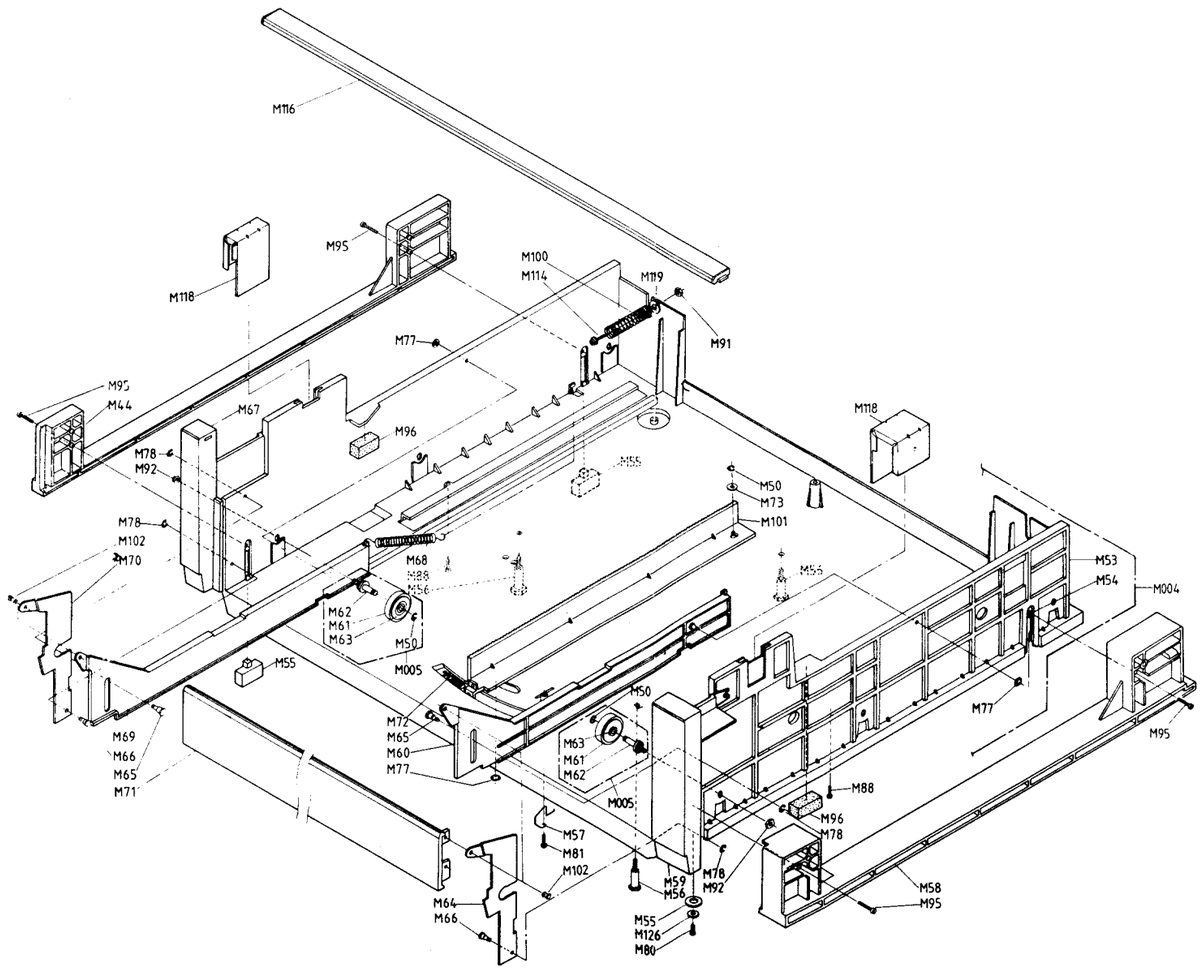
TYPE NO: LE-40X-03-03 W/O COUNTER PARTS NO: 4380402020



Player Exploded View

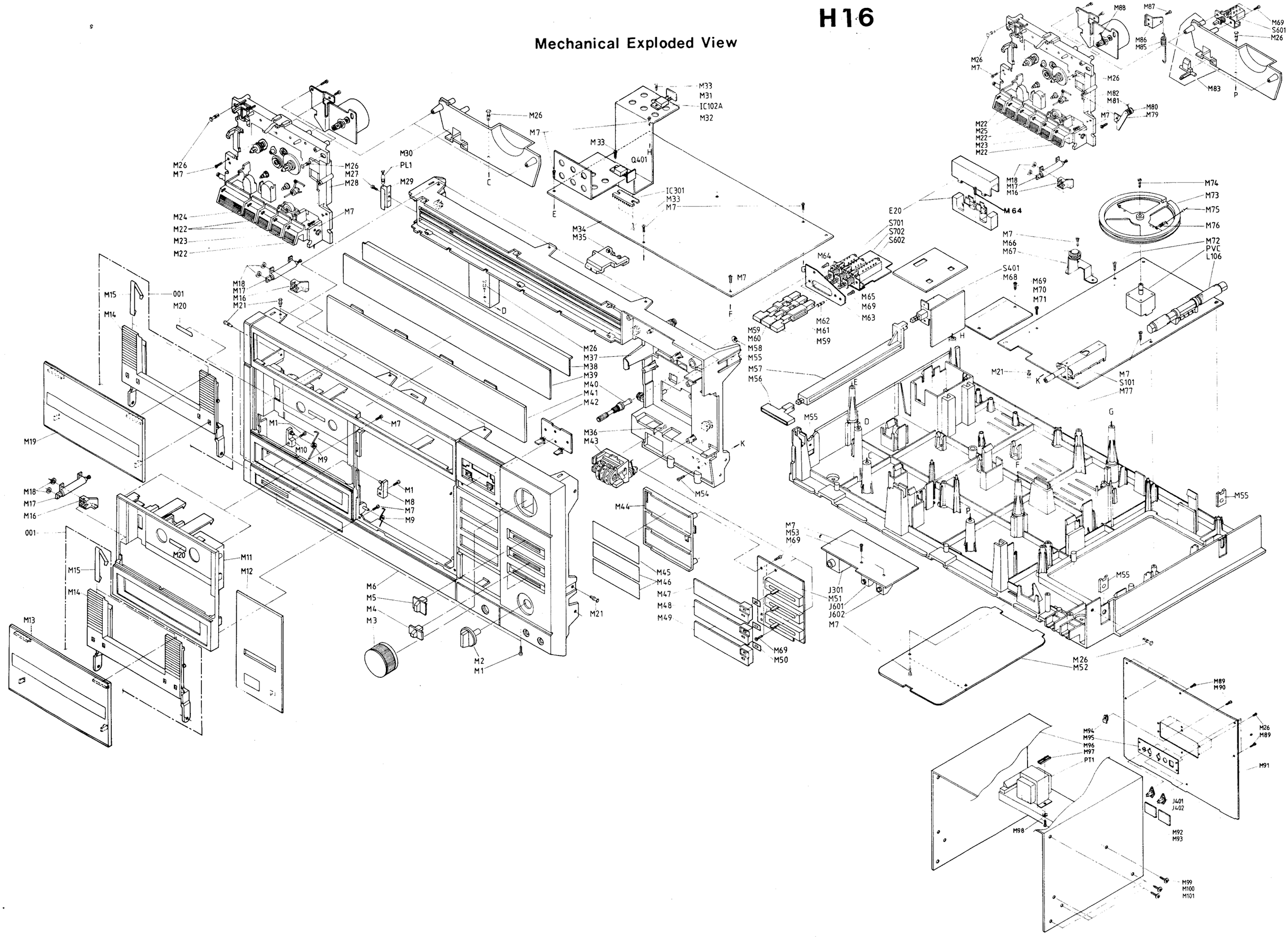
TYPE NO CP-82M-21 PARTS NO C486030212
CP-82M-22 C486030213
CP-82M-23 C486030214





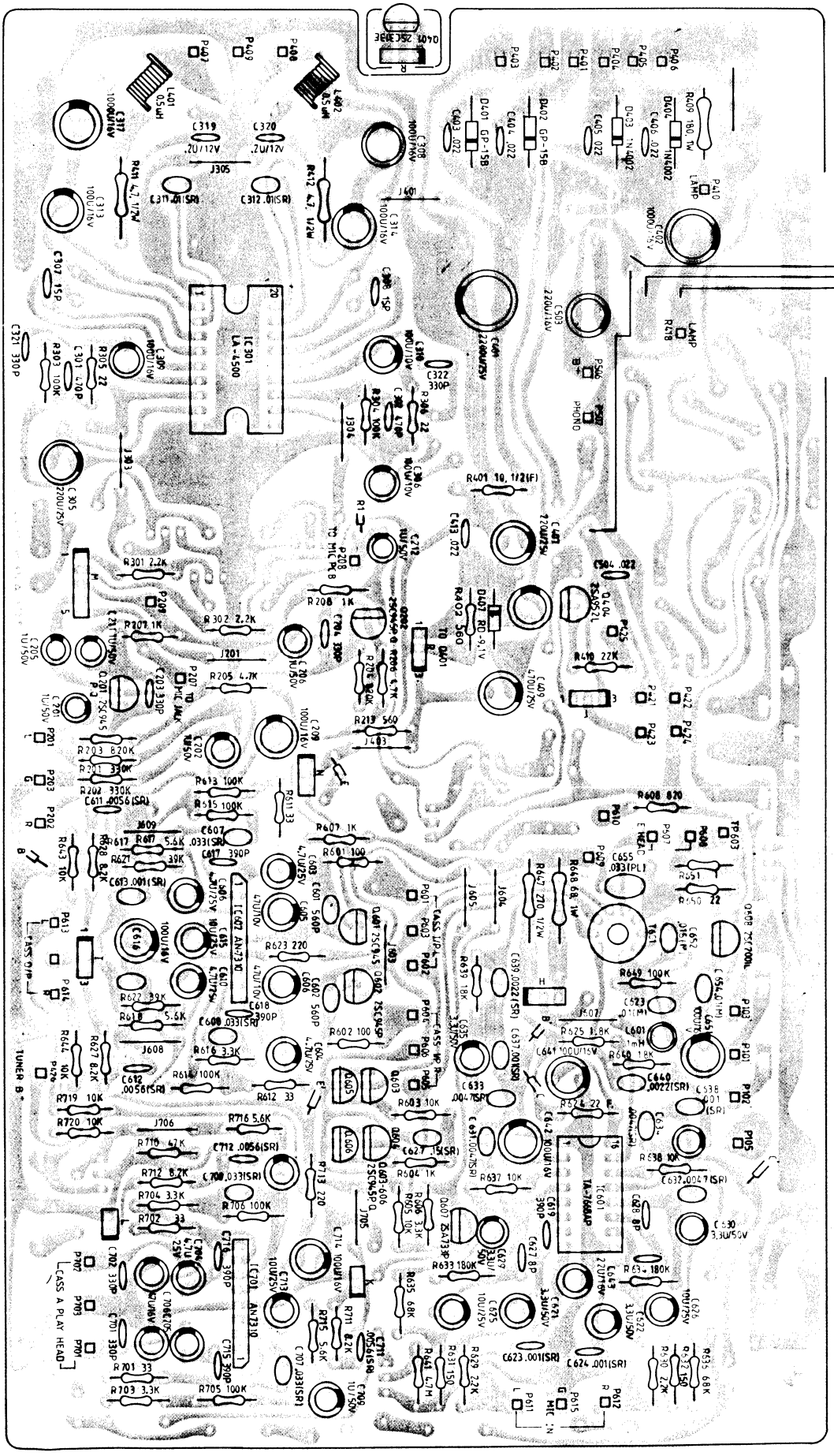
H16

Mechanical Exploded View



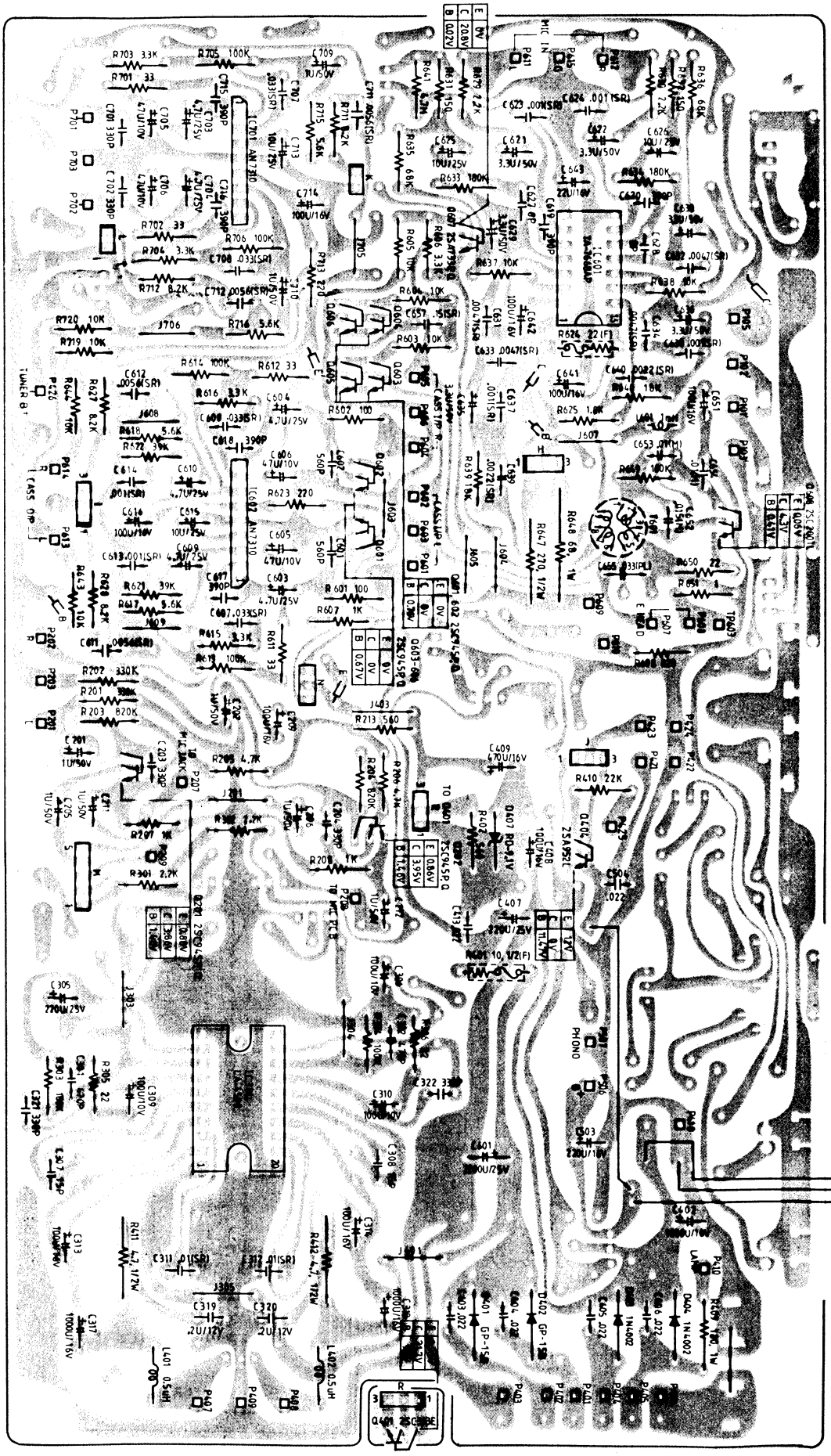
P C Board-Component Side

Main PCB



P C Board-Solder Side

Main PCB

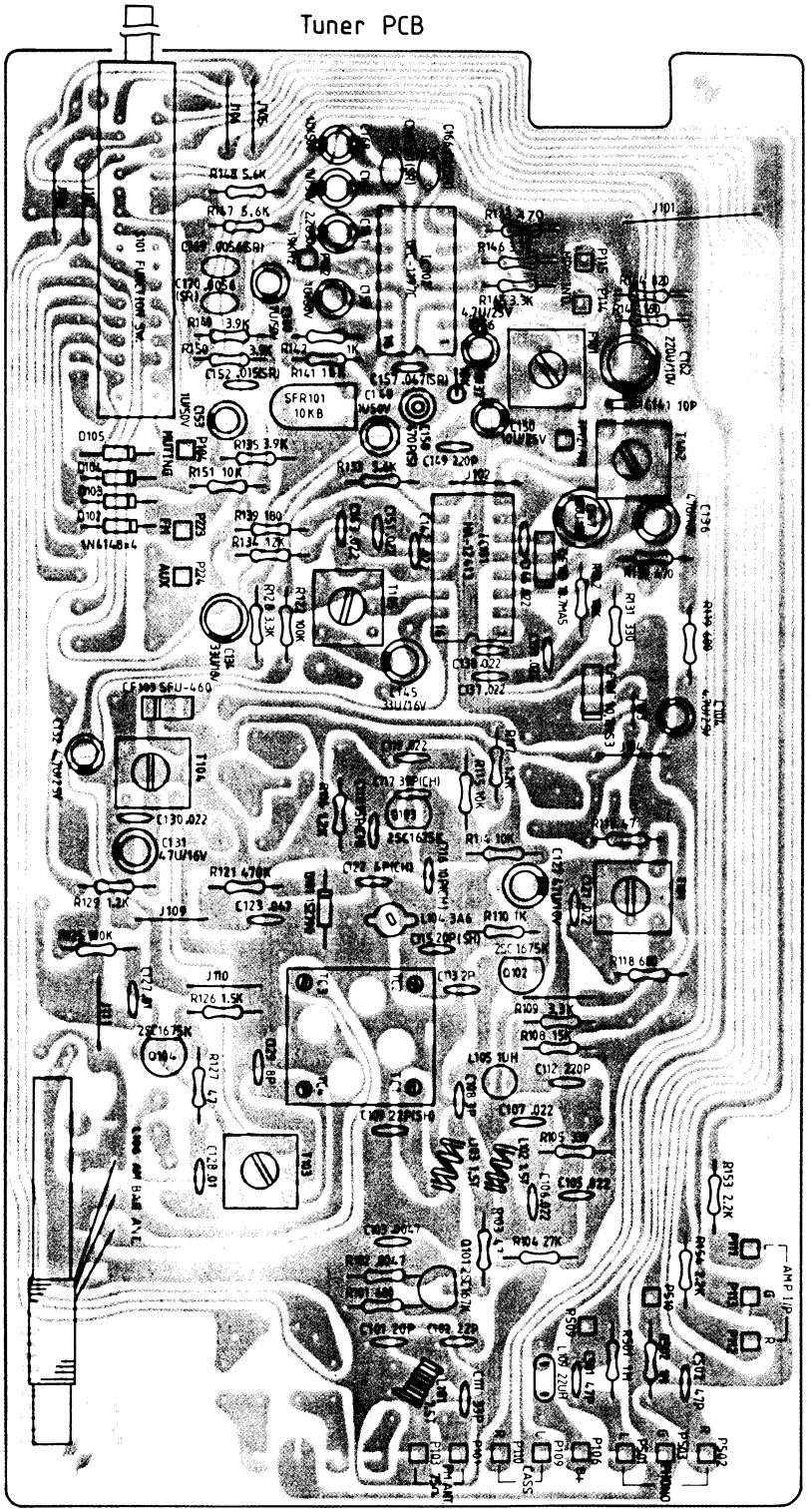


REF NO. / PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC301 LA4500	22.5V	21.1V	0.6V	11.6V	11.8V	0.8V	1.2V	0V	21.9V	0V	0.6V	1.3V	0V	1.2V	0.8V	11.7V	11.5V	0.6V	21.1V	0V
IC601 TA7668AP	0V	8.32V	0V	3.59V	1.29V	1.26V	0V	1.07V	0V	0V	1.25V	1.28V	3.64V	0V	2.74V	8.79V				
IC602 AN-7310	1V	0.45V	4.22V	3.8V	0V	8.06V	4.22V	0.49V	1V											
IC701 AN-7310	1V	0.45V	4.22V	7.94V	0V	4.32V	0.45V	0.45V	1V											

IC P
IC102
78M12

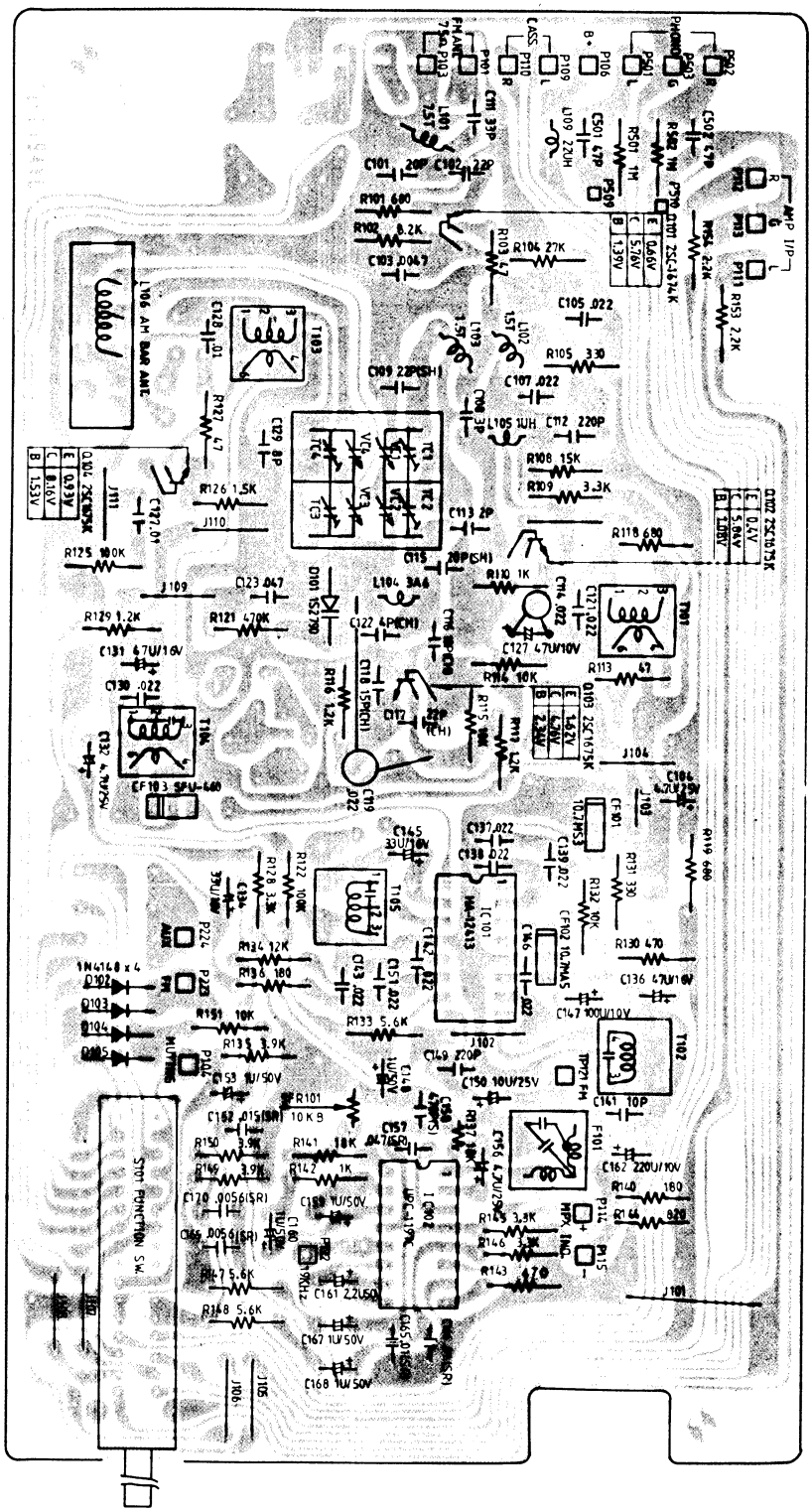
TO IC PCB

P C Board-Component Side



P C Board-Solder Side

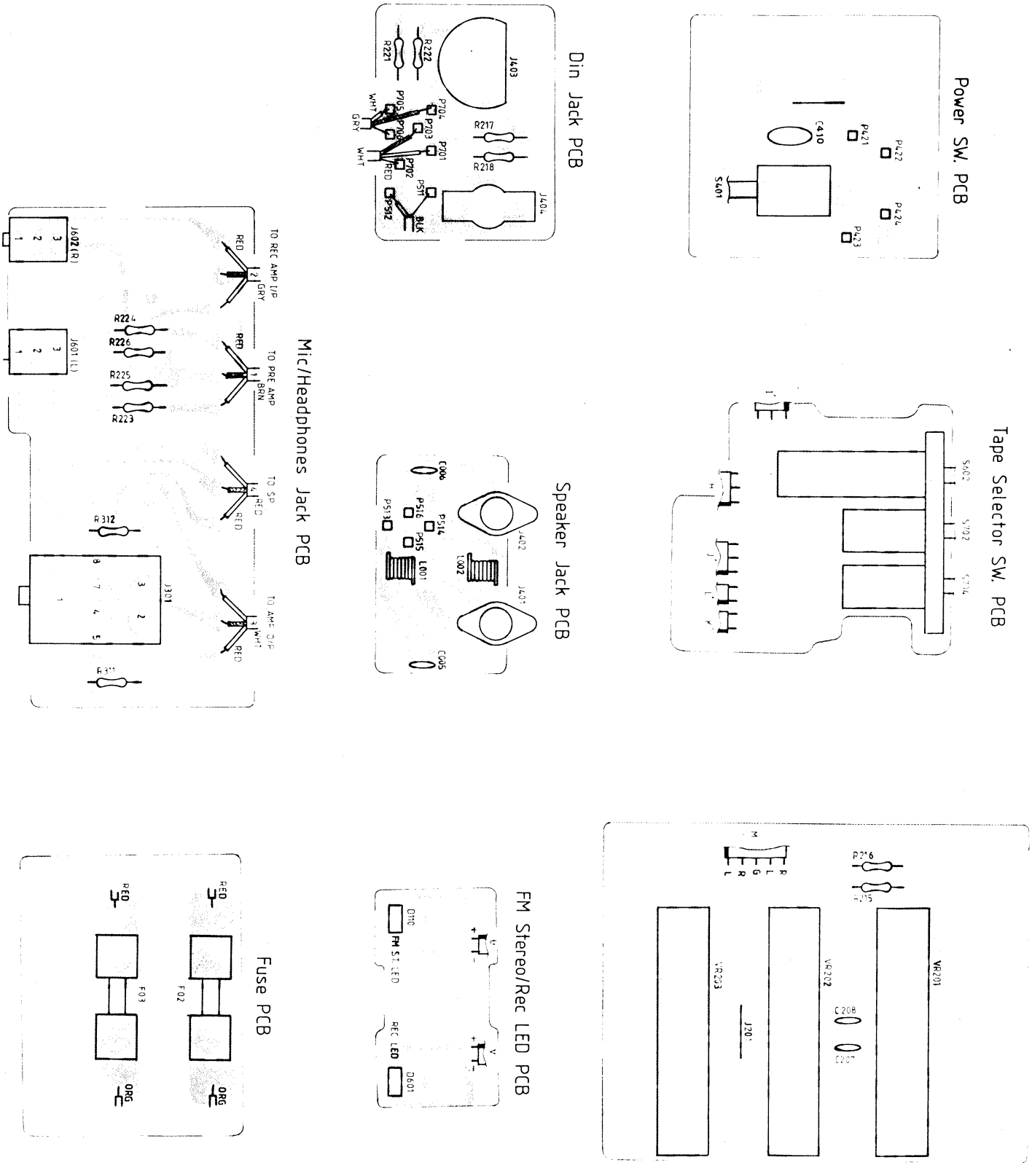
Tuner PCB



REF NO	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC101	MA2243	1.2V	1.2V	0V	2V	0V	1.32V	2.04V	2.03V	2.39V	2.44V	7.27V	0.6V	0V	2.04V	0.34V	0.87V
"		1.81V	1.81V	6.4V	1.83V	0V	1.28V	2.01V	2V	2.16V	2.18V	7.29V	0.38V	0V	2V	0.28V	0.86V
IC102	uPC1197	6.55V	1.51V	2.02V	1.32V	1.31V	7.34V	0V	0.39V	0V	1.67V	1.67V	1.26V	1.68V	1.68V	1.68V	1.96V

--AM
--FM

P C Board-Component Side



Dial Stringing

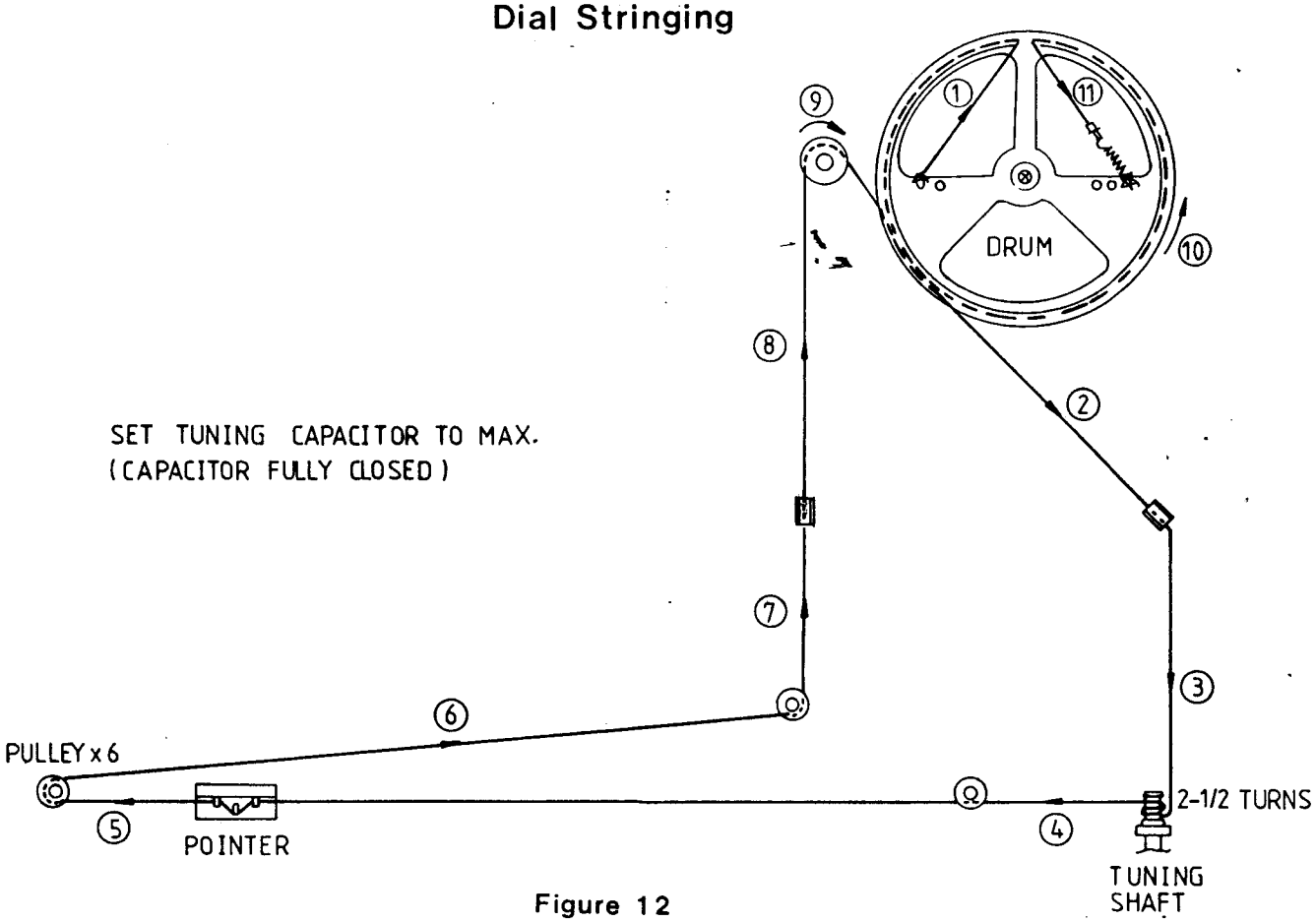


Figure 12

Disassembly nstructions

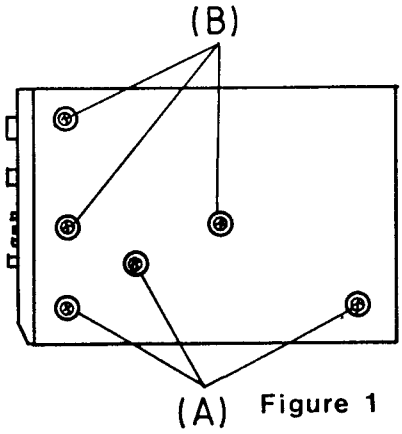


Figure 1

TO REMOVE PLAYER

1. Remove 6 screws (A), two each from the left and right side of cabinet (Figure 1)

TO REMOVE CABINET

1. Remove 6 screws (B), two each from the left and right side of cabinet (Figure 1)

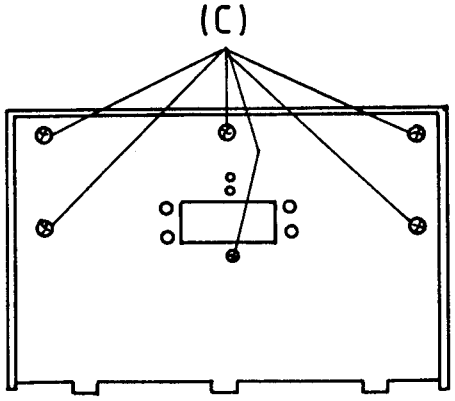
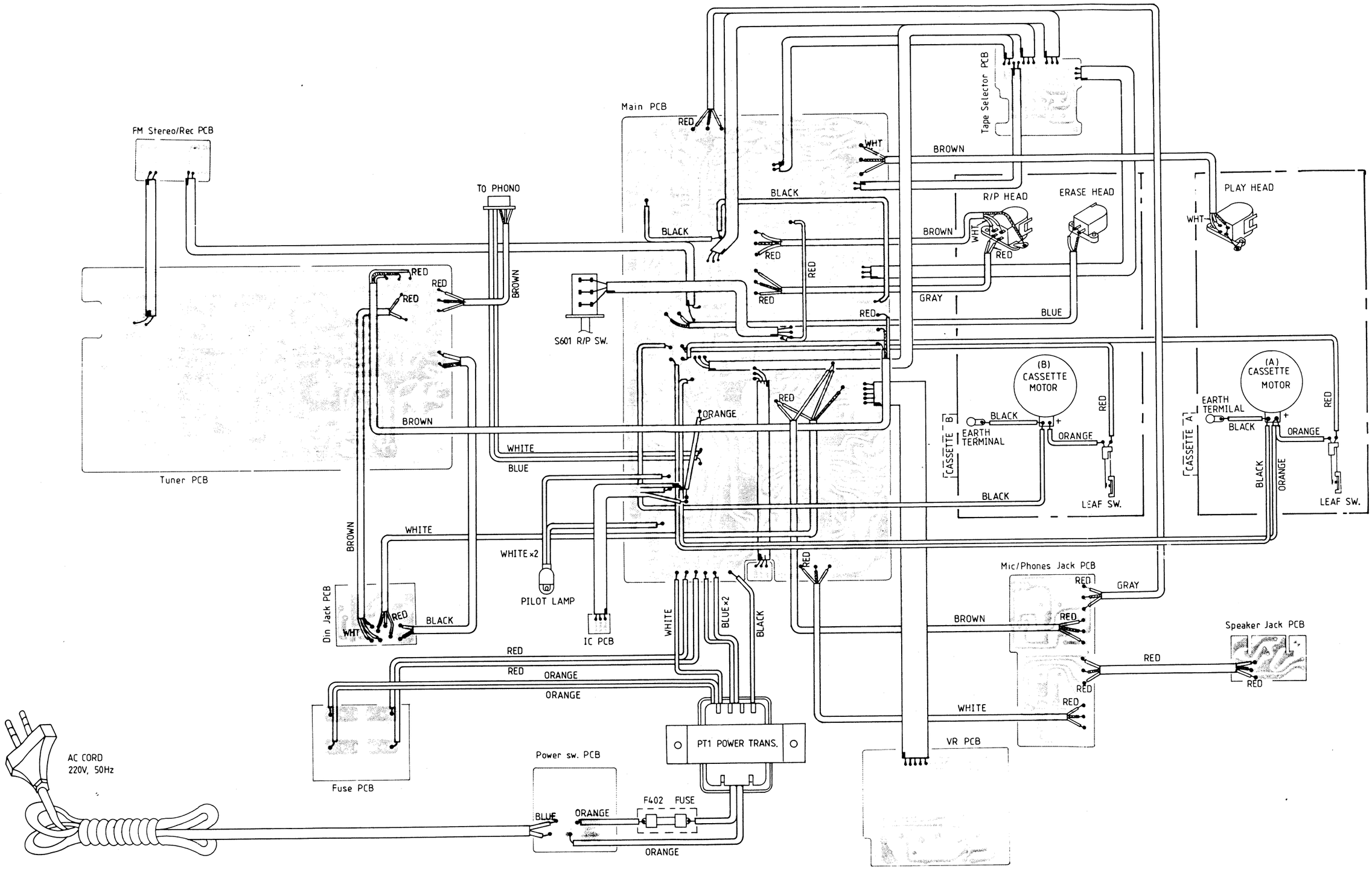


Figure 2

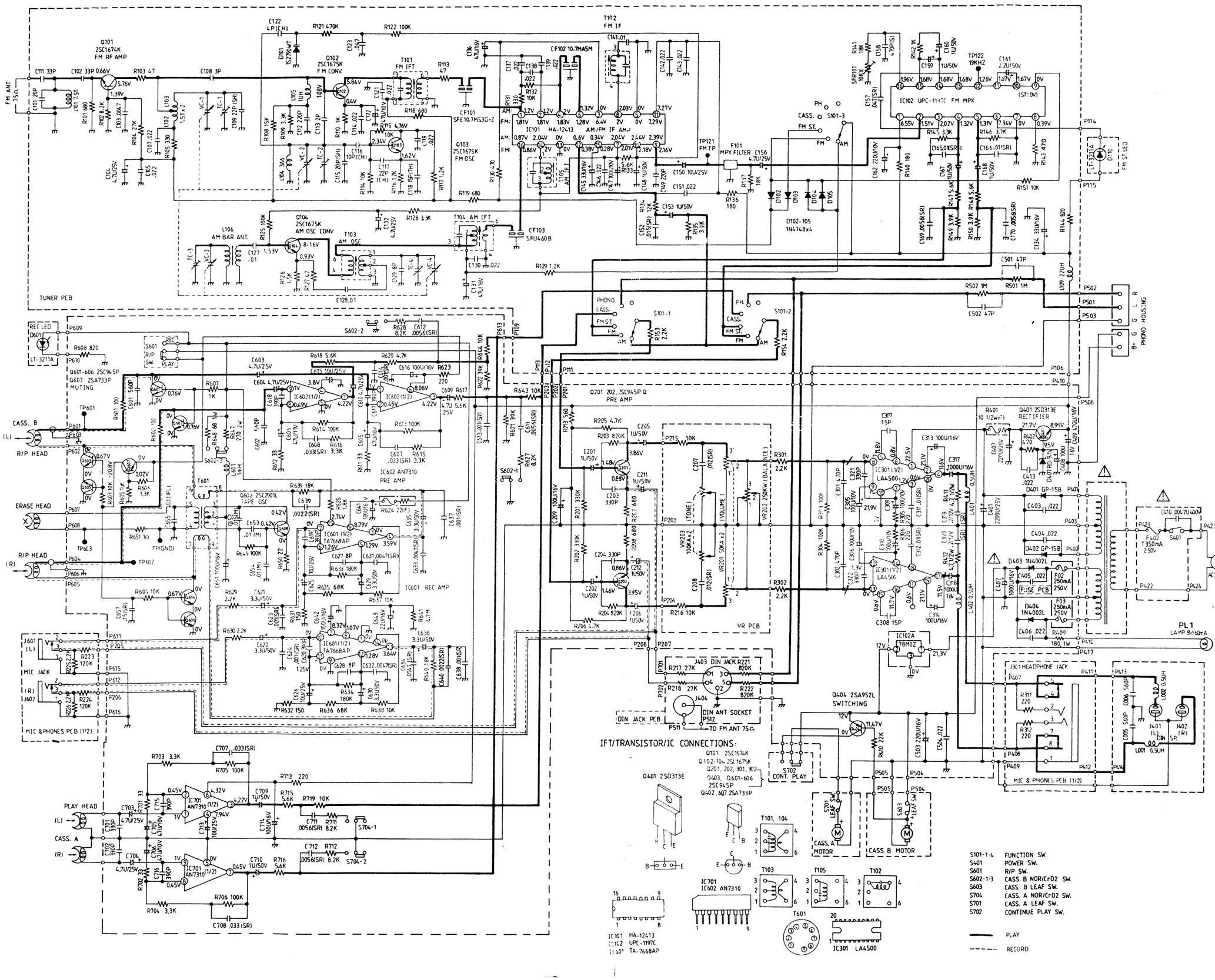
TO REMOVE BACK BOARD

1. Remove 6 screws (C), from back board. (Figure 2)

Wiring Diagram



Schematic Diagram



S T U E C K - L I S T E: H16 VOM: 01.06.84

ET - NR | ET - BEZEICHNUNG | PREIS | SEITE: 1

ET - NR	ET - BEZEICHNUNG	PREIS	
14080	SCH.REGLER 50Kx2 'VOLUME'	4,80	
14081	SCH.REGLER 250K 'BALANCE'	3,10	
14082	SCH.REGLER 100Kx2 'TON'	4,80	
31030	TRS 2 SC 460 B 'ET=2 SC 461'	1,50	
31160	TRS 2 SC 1675 K	1,50	
31174	TRS 2 SC 536 F	1,30	
31181	TRS 2 SC 1674	1,50	
31424	TRS 2 SD 313 '=KTC 2233'	9,80	
31519	TRS 2 SC 945	0,65	
31569	TRS 2 SA 952 A	0,60	
31575	TRS 2 SA 733	0,45	
31698	TRS 2 SC 2001 L	1,50	
34357	IC UPC 1197 C	3,75	
34436	IC UPC 7812	3,70	
34493	IC HA 12413	5,80	
34761	IC AN 7310	2,50	
34811	IC TA 7668 AP	6,30	
41912	LOESCHOSZILATOR SPULE	2,80	
41947	FILTER UND SPULEN DIV.	0,90	MIT POS UND FARBE BE
42265	NETZTRAFO	27,90	
47063	TASTSCHALTER /AW '6-POLIG'	2,50	
47419	TASTSCHALTER (S101) 'FUNKTION'	2,50	
47427	MICROSCHALTER 'CASS'	1,50	GPM 7035LE
47496	MICROSCHALTER 'PS'	3,90	
47696	NETZSCHALTER (S401)	4,40	
47739	TASTENSATZ 'S602,702,704'	8,80	
48134	BUCHSE 'LAUTSPRECHER'	1,30	
48339	KOPFHOERER-BUCHSE	3,10	
48360	BUCHSE 'MIKROFON'	1,30	
48480	BUCHSE DIN 5PIN	2,50	
48481	ANTENNENBUCHSE KOAX	2,20	
48482	BUCHSENPLATTE	2,50	
52046	ZIERLEISTE (FRONT) 'M6-GEH'	19,80	
52049	EINLAGE (LAUTST.) 'M45-GEH'	0,30	
52050	EINLAGE (BAL/TON) 'M46-GEH'	0,30	
52052	ANZEIGE (LAUTST) 'M47-GEH'	0,75	
52053	ANZEIGE (BALANCE) 'M48-GEH'	0,75	
52054	ANZEIGE (TON) 'M49-GEH'	0,75	

S T U E C K - L I S T E: H16 VOM: 01.06.84

ET - NR	ET - BEZEICHNUNG		PREIS	SEITE: 2
52054	ANZEIGE (TON)	'M49-GEH'	0,75	
52055	BLENDE (FUNKTION)	'M12-GEH'	4,80	
52056	HALTEWINKEL (LAUFW)	'M30-GEH'	2,20	
52058	RAHMEN (ANZEIGE)	'M44-GEH'	0,75	
52059	FRONT F. PLATTENSP.	'M43-PS'	15,10	WATSON CO 6760
52060	FRONT F. PLATTENSP.	'M43-PS'	15,10	ELITE CO 6760
52061	FRONT F. PLATTENSP.	'M43-PS'	15,10	TRISTAR CO 6760
52062	STROBOSKOPSCHEIBE	'M2-PS'	0,30	
52063	BLENDE (RECHTS)	'M59-PS'	3,10	
52067	BLENDE (LINKS)	'M67-PS'	3,10	
52070	FENSTER (PS)	'M71-PS'	9,00	
54558	SKALENZEIGER		1,10	
54559	SKALENHINTERGRUND	'M38-GEH'	1,90	
54560	SKALA	'M39-GEH'	3,10	
54561	SKALENGLAS KOMPLETT	'M41-GEH'	4,40	
55616	CFD-FENSTER (B)	'M13-GEH'	5,80	
55617	CFD-FENSTER (A)	'M19-GEH'	5,80	
55618	C F D -KOMPL.	'001=M14+15-GEH'	3,10	
55619	C F D	'M14-GEH'	2,20	
58432	PLATINE	'TUNER KOMPLETT'	79,20	
61715	ANDRUCKROLLE	'5-DECK'	1,70	
61716	ANTRIEBSRIEMEN	'30-DECK'	1,10	
61717	ZWISCHENRAD	'32-DECK'	0,60	
61718	SCHWUNGMASSE	'33-DECK'	3,40	
61719	MOTORPULLY	'37-1-DECK'	0,30	
61764	ZAEHLWERKRIEMEN	37MM	0,90	
61765	ZAEHLWERKRIEMEN	55MM	1,10	
61766	ANTRIEBSRIEMEN	'PS'	3,10	
62028	FEDER CFD	'M15-GEH.'	0,45	
62029	FUNKTIONSSCHIEBER	'M18-PS'	2,80	
62030	TONARMABLAGE KOMPLETT	'M23-PS'	0,90	
62031	RUECKHOLSCHIEBER	'M001-PS'	2,50	
62032	ZAHNRAD (SCHLITTEN)	'M48-PS'	2,20	
62033	UMLENKRAD (SCHLITTEN)	'M49-PS'	1,70	
62036	LAUFROLLEN PS-CHASSIS	M005-PS	1,30	
62037	LAUFROLLEN (LAUFWERK)	M106-PS	0,45	
62038	GUMMI F. LAUFROLLEN	'M107-PS'	0,20	
62039	ACHSE F. LAUFROLLEN	'M108-PS'	0,45	

S T U E C K - L I S T E: H16 VOM: 01.06.84

ET - NR	ET - BEZEICHNUNG		PREIS	SEITE: 3
62039	ACHSE F. LAUFROLLEN	'M108-PS'	0,45	
62040	ZAHNRAD (ANTRIEB)	'M109-PS'	3,10	
62041	GUMMI (PLATTENTELLER)	'M3-PS'	3,40	
62042	ACHSE (PLATTENTELLER)	'M6-PS'	5,80	
62043	HALTERUNG (LIFT)	'M12-PS'	0,60	
62044	HALTER (FUNKT.SCHIEBER)	M19-PS	0,75	
62045	FEDER (LIFT)	'M24-PS'	0,20	
62046	LIFT	'M25-PS'	1,30	
62047	LAUFROLLEN (PS-FENSTER)	M26-PS	0,30	
62048	STOPPER	'M27-PS'	0,30	
62049	SCHIEBER (LIFT)	'M31-PS'	1,30	
62050	SCHIEBER (START)	'M32-PS'	1,30	
62051	HALTER (PS-FENSTER-R)	'M64-PS'	2,20	
62052	HALTER (PS-FENSTER-L)	'M70-PS'	2,20	
62053	FUEHRUNGSSCHIENE (PS)	M101-PS	3,70	
62054	GUMMI F. LAUFROLLE	'M113-PS'	0,20	
62055	PLATTENTELLER	'M4-PS'	17,20	
63135	BAND-ZAEHLWERK		5,30	
63311	CASSETTEN-LAUFWERK	'A'	74,90	
63320	CASSETTENLAUFWERK	'B'	52,40	
63321	PLATTENLAUFWERK KOMPLETT		200,00	
64079	SYSTEM	'MIT NADEL'	24,00	
64080	NADEL		4,80	
65049	A/W-KOPF		13,20	
66049	MOTOR F. PLATTENSPIELER		25,00	
66114	MOTOR 12 V CCW	'CASS-DECK'	19,80	66048 NUR ALS ET
66159	MOTOR (TRANSPORT)	'M52-PS'	14,00	
69042	LAUTSPRECHER - BOX	'KOMPLETT'	44,40	
341016	IC LA 4500		14,00	
511212	RUECKWAND	'M91-GEH'	5,30	ELITE CO 6760
511213	RUECKWAND	'M91-GEH'	5,30	WATSON CO 6760
511214	BLENDE (CASS.INNEN)	'M11-GEH'	5,30	
511215	RUECKWAND	'M91-GEH'	5,30	TRISTAR CO 6760
511216	HOLZGEHAEUSE	'M96-GEH'	39,20	
511217	GEHAEUSEFRONT	'M6-GEH'	11,60	
511218	VERPACKUNG	'WATSON CO6760'	20,70	
511219	VERPACKUNG	'ELITE CO6760'	20,70	
511220	VERPACKUNG	'TRISTAR CO6760'	20,70	

S T U E C K - L I S T E: H16 VOM: 01.06.84

ET - NR | ET - BEZEICHNUNG | PREIS | SEITE: 4

ET - NR	ET - BEZEICHNUNG		PREIS
511220	VERPACKUNG	'TRISTAR C06760'	20,70
511221	STYROPOR	'RECHTS'	3,10
511222	STYROPOR	'LINKS'	3,10
511223	PS-CHASSIS	'M8-PS'	27,90
531209	DREHKNOPF (FUNKTION)	'M2-GEH'	1,10
531210	TUNINGKNOPF	'SENDERWAHL'	1,70
531211	SCHIEBEKNOPF (BAL/TON)	'M4-GEH'	0,75
531212	SCHIEBEKNOPF (LAUTST)	'M5-GEH'	0,90
531213	TASTEN (CASS. DECK)	'M22-GEH'	1,30
531214	TASTE (PLAY)	'M23-GEH'	1,30
531215	TASTE (EJECT)	'M24-GEH'	1,30
531216	TASTE (AUFNAHME)	'M25-GEH'	1,30
531217	TASTE (NETZ)	'M56-GEH'	0,90
531218	TASTE (BANDWAHL)	'M59-GEH'	0,75
531219	TASTE (WIEDERHOLUNG)	'M60-GEH'	0,75
531220	KNOPF (PS-FUNKTION)	'M45-PS'	1,30
531221	SCHIEBEKNOPF (LIFT)	'M37-PS'	1,30
590048	BED.ANLEITUNG	'WATSON C06760'	3,40
590049	BED.ANLEITUNG	'ELITE C06760'	3,40
590050	BED.ANLEITUNG	'TRISTAR C06760'	3,40
621223	AUSWURFMECHANIK (CFD)	'M17-GEH'	1,90
621225	SINGLEADAPTER	'M1-PS'	0,45

E n d e